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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
CORDRAY, DENNIS R	
ART UNIT	**PAPER NUMBER**
1731	

DATE MAILED: 09/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/736,541	MAULER, DIRK	
	Examiner	Art Unit	
	Dennis Cordray	1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 August 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4-8,10-13,15-21,23-25,27-30 and 32-39* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-2, 4-8, 10-13, 15-21, 23-25, 27-30 and 32-39* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 8/17/2006 have been fully considered but they are not persuasive.

Applicant argues that the amended claims contain properties of cross directional tensile strength and relative wet-to-dry strength in the cross direction that are greater than those in the example disclosed by Wallenius et al. The example disclosed by Wallenius is but one embodiment from one reference that does not in itself disclose all of the features of the instant invention. The rejections as well as responses to Applicants' arguments detail the support for additional embodiments of Wallenius et al (refining fibers to freeness values of up to 45 °SR, tissues comprising varying percentages of the refined and unrefined fibers), which would affect the strength properties. In addition, reasoning has been presented for combining the teachings of Wallenius et al with those of Espy and Vinson et al. The use of wet and dry strength agents, retention aids and softeners in tissues is well known in the art to provide desirable structural and tactile properties desired by consumers in tissue products (Espy, col 1, lines 10-13; Vinson ('185), col 1, lines 39-56). As detailed in the rejections, the cationic and anionic polymers as well as quaternary softening agents are well known in the art to provide these desired properties. Thus the motivation and the general knowledge was available to one of ordinary skill in the art at the time of the invention to make tissues substantially identical to the claimed tissues. Tissues so formed can have the claimed cross directional strength properties because, where the

claimed and prior art apparatus or product are identical or substantially identical in structure or composition, a *prima facie* case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). In other words, when the structure recited in the reference is substantially identical to that of the claims, the claimed properties or functions are presumed to be inherent.

The cross directional wet tensile strength is also directly proportional to the basis weight of the tissues. Wallenius et al discloses an example of a tissue having a basis weight of approximately 30 g/m^2 (col 5, Table 2) whereas Espy discloses tissues having a basis weight of 65 g/m^2 (col 14, lines 60-61) and Vinson et al ('185) discloses basis weights from 10 to 100 g/m^2 (col 19, lines 57-59). It would have been obvious to make tissues of lower as well as much higher basis weight than that of the example provided by Wallenius et al as tissues typical in the art, the tissues of higher basis weight having proportionately higher cross directional wet tensile strength. For example, a tissue of the composition disclosed in the examples of Wallenius et al but having a basis weight of 100 g/m^2 would have a cross directional wet tensile strength of about 200 N/m or about 10 N/50 mm, which is greater than the claimed lower limit.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1- 38 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 1, 20, 34, 36-37 and 38 recite wet-to-dry strength in cross direction of more than 36.1 or 42.6. The wet-to-dry strength in cross direction does not appear anywhere in the Disclosure as originally filed.

Specification

The disclosure is objected to because of the following informalities:

A parameter described in the Disclosure as the Relative Wet Tensile Strength is discussed in detail on p 34, section 3.6 and a formula given for its calculation. Another parameter, Relative Wet Strength, is recited in the last two lines of the Table on p 37. However, the values recited for Relative Wet Strength in the Table do not correspond to the formula given on p 34 for Relative Wet Tensile Strength. For instance, dividing the value in the Table for Wet tensile strength (CD) by that for Dry tensile strength (CD) of the Comparative example, according to the formula given results a Relative Wet Tensile Strength of 0.359. A similar calculation for the Inventive example results in a Relative Wet Tensile Strength of 0.426. Thus the values given for Relative Wet Strength in the Table are not those calculated by the formula given for Relative Wet Tensile Strength.

Appropriate correction is required. No new matter should be entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-2, 4-8, 10-13, 15-21, 23-25, 27-30 and 32-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wallenius et al (6068734) in view of Espy (5316623) and further in view of Vinson et al (5958185) and Vinson et al (5611890).

Wallenius et al discloses a tissue paper (col 1, lines 6-7) comprising an admixture of

(a) at least 10% of a long fiber pulp that has been beaten to a freeness value of 20-40 °SR and

(b) at least 20% of a 60-70% long fiber pulp that has not been beaten or that has been beaten to a freeness of at least 600 ml CSF (col 1, lines 60-65; col 2, lines 18-20 and 26-30).

Wallenius et al also discloses that the fibers can be softwood fibers (col 3, lines 12-15). Wallenius et al also discloses a paper comprising a wet strength resin (col 4, lines 5-6). Wallenius further discloses a process for making the tissue comprising beating the cellulosic fibers, wet laying and dewatering the fibers and then drying and creping the fibers (col 3, lines 54-57; col 4, lines 3-11). While the reference paper used by Wallenius et al was made from fibers beaten to a freeness of between 20 and 26

°SR, it would have been obvious to further refine the fibers to a freeness of greater than 26 °SR (up to 40 °SR) in view of the range previously specified.

Wallenius et al does not disclose adding an anionic polymer or a softener. Wallenius et al also does not disclose the composition of the wet strength agent. Wallenius et al further does not disclose the amounts of additives used in the process.

Espy discloses an absorbent paper (col 1, lins 6-7) comprising softwood and/or hardwood pulp (col 9, lines 4-9) and

(A) a wet strength resin that can be a polyaminoamide-epichlorohydrin resin, a polyamine-epichlorohydrin resin, or an aminopolymer-epichlorohydrin resin (col 2, lines 24-28),

(B) a water-soluble anionic polymer that can be a derived from polyacrylic acid, carboxylic acids, and carboxyalkylated polysaccharides (col 2, lines 29-32; col 3, lines 25-33). Of these, carboxymethyl cellulose (a carboxyalkylated cellulose) is the most preferred (col 3,lines 67-68).

(C) a tertiary amino polyamide-epichlorohydrin resin (col 2, lines 33-34).

The absorbent paper comprising these resins possesses a combination of good dry strength, good wet strength and improved water absorbency, which are desirable qualities in tissues and toweling (col 1, lines 10-14; col 2, lines 15-19). Further, Espy teaches that the combination of resins A and B is known in prior art to enhance both wet and dry strength (col 1, lines 50-58).

Espy teaches that other effective wet strength resins include urea-formaldehyde and melamine-formaldehyde resins (col 1, lines 17-19). Espy also teaches that surface-

active agents or debonders (which can act as softeners by the instant disclosure) are used in tissues to facilitate penetration of water into the paper (col 1, lines 41-44).

Espy discloses numerous examples of the cationic polymer (resins A and C above) being added to the stock in an amount between 0.25 and 1 % by weight of the pulp and of the anionic polymer being added to the stock in an amount between 0.125 and 1 % by weight of the pulp (cols 13-17, Tables R, S, T and U). The concentrations in the examples significantly overlap the claimed ranges).

Espy teaches that the ratio of anionic to cationic polymers depends on several variables in the system and can be below 0.5 when optimized (cationic /anionic ratio greater than 2) (col 9, lines 33-58).

Vinson et al ('185) teaches that consumer demand is for tissues having properties of softness and high strength to maintain integrity and resist tearing during use (col 1, lines 39-56). Vinson et al ('185) also teaches that it is well known in the art to use wet strength agents, retention aids, and softeners in tissues (col 1, lines 60-64). Vinson et al ('185) discloses a tissue (abstract) that comprises wood pulp (col 15, lines 66-67 and col 16, lines 1-3); a wet-strength agent, which can be a polyamide-epichlorohydrin or urea-formaldehyde resin (col 13, lines 7-10); an anionic polymer that can be contain carboxylic acid monomers, including (meth)acrylic acid (col 11, lines 21-22, 40); and a bond inhibiting agent, which can be a quaternary ammonium compound, that serves to disrupt the fiber to fiber bonding and improve softness of the tissue (col 12, lines 6-19). The bond inhibiting agent can be present in an amount from 0.02 to 0.5% by weight of the tissue paper. This concentration significantly overlaps the

claimed concentration. Vinson et al also discloses that the anionic polymer is preferably added before the cationic polymer (col 15, lines 8-15). Vinson et al ('185) further discloses that an advantage is obtained when the anionic polymer is added to the fillers before mixing with the remainder of the papermaking slurry and the cationic polymer (col 15, lines 32-38), the advantage being a better retention of the fillers in the final paper. Vinson et al ('890) exemplifies this advantage using a comparison of tissue samples made with and without the anionic surfactant added with the filler (col 38, lines 60-67). It is known in the art to use polymeric additives to papermaking pulp fur multiple simultaneous purposes, such as fixing agents, drainage and retention aids, flocculants and wet or dry strength aids (if evidence is needed, see Auhorn et al, 6083348, col 2, lines 34-37), thus the above polymers can serve more than one purpose in the process.

The art of Wallenius et al, Espy, Vinson et al and the instant invention are analogous as they pertain to the art of making tissue papers. It would have been obvious to one of ordinary skill in the art at the time of the invention to add the claimed cationic and anionic polymers and softening agent to the tissue sheet of Wallenius et al in view of Espy and further in view of Vinson et al ('185) and and Vinson et al ('890) to obtain the strength and softness properties desired by consumers. It would also have been obvious to optimize the ratio of anionic to cationic polymers used in the tissue to obtain the claimed range. It would have also been obvious to add the anionic polymer before the cationic polymer to obtain better retention of fillers in the tissue. The tissue so formed can have the claimed cross directional strength properties because, where the claimed and prior art apparatus or product are identical or substantially identical in

structure or composition, a *prima facie* case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). In other words, when the structure recited in the reference is substantially identical to that of the claims, the claimed properties or functions are presumed to be inherent.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Cordray whose telephone number is 571-272-8244. The examiner can normally be reached on M - F, 7:30 -4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DRC

ERIC HUG
PRIMARY EXAMINER